



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,811	10/23/2003	Jean-Pierre Dath	F-716 DIV	6352

7590

07/28/2006

David J. Alexander  
Fina Technology, Inc.  
P.O. Box 674412  
Houston, TX 77267-4412

EXAMINER
----------

SAMPLE, DAVID R

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/691,811	<b>Applicant(s)</b> DATH ET AL.	
	<b>Examiner</b> David Sample	<b>Art Unit</b> 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-21 and 23-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-21 and 23-51 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/206,210.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 23 is objected to because of the following informalities:

In claim 23, line 2, and second to last line, "polypropylene" should be "propylene."

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim 20 recitation containing "at least 20% silica" is not described by the specification, as originally filed. The closest written description the examiner was able to locate was that the catalyst contains 5 to 95 wt% binder or 20 to 50 wt% binder. See page 16, first full paragraph. These ranges do not provide support for the range of "at least 20 wt%" because this range encompasses amounts of binder higher than 95 wt% such as 99 wt%, and the specification does not reasonably convey this concept. See MPEP 2163.05 III.

Art Unit: 1755

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites that the formulated catalyst, i.e., the bound mixture of silicate zeolite and silica, is subjected to steaming and extraction. Claim 20, which depends from claim 19, states that the steaming and extracting occur before the binding. These recitations seem to directly conflict one another in that claim 19 requires that the bound zeolite be steamed and extracted, whereas claim 20 requires that the zeolite be steamed and extracted and then bound with silica. Correction and/or clarification is requested.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19-21, and 23-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Bowes et al. (US Patent No. 4,579,993).

Bowes et al. discloses a method of making a catalyst in which a zeolite is composited with a silica binder to form a catalyst, the catalyst is steamed and acid extracted to remove detrital aluminum. See the abstract. The acid extracted catalyst is calcined. See col. 7, lines 34-39. The reference exemplifies ZSM-5 (i.e., an MFI silicate). See Example 1, col's 7-8.

As to the silica binder content recited in claims 20 and 21, Bowes et al. discloses that the silica is employed as a binder in an amount of 35 weight percent. See col. 7, lines 49-50.

Bowes et al. incorporates by reference Argauer et al. (US 3,702,886) for its disclosure of ZSM-5. See col. 4, lines 34-38. Argauer et al. discloses that ZSM-5 has a silica/alumina ratio of 5 to 100 (i.e., a silicon to aluminum ratio of 2.5 to 50). See the abstract. Thus, Bowes et al. discloses that the starting ZSM-5 material has a silicon/aluminum of 2.5 to 50, which meets the requirements of the ZSM-5 starting material of instant claims 27 and 39.

Bowes et al. discloses calcining the acid extracted catalyst at a temperature of 400-600°C for 0.5 to 16 hours. See col. 7, lines 35-38. This calcining treatment is identical to the calcination described by instant claim 29.

As to claim 30, the reference discloses that the catalyst extrudate has a size of 1/16". See col. 7, lines 4-5.

Bowes et al. discloses that the steam treatment comprises heating in 100% steam (i.e., 100 kPa at one atmosphere) at a temperature of 400-600°C for 2 to 100 hours. See col. 7, lines 24-27. These conditions are the same as those claimed in instant claims 31 to 34.

Bowes et al. does not disclose the resultant silicon/aluminum ratio of the ZSM-5 (although the reference does disclose that zeolites having a silica/alumina ratio of 1600 are useful, see col. 2, lines 35-36). However, Bowes et al. discloses starting materials, and process

Art Unit: 1755

steps that are identical to the presently claimed process, and therefore must result in an identical amount of dealumination. In other words, the ZSM-5 of Bowes et al. after treatment is presumed to inherently possess the final silicon/aluminum ratio recited in claims 19 and 24-26. See MPEP 2112.

The following limitations are being treated as “intended use” limitations because the recitations do not relate to the formation of the catalyst:

- The claim 19 recitation of “for cracking”;
- The claim 23 limitation “to produce ethylene and polypropylene from C<sub>4</sub> to C<sub>10</sub> olefins”;
- The claim 23 limitation “wherein said catalyst is used to produce ... olefins”;
- and
- The entirety of claims 35-38 and 41-51.

On the subject of intended use limitations, MPEP 2111.02 states:

During examination, statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. [MPEP 2111.02 (Citing *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963))]

No structural difference can be discerned between the prior art and the instant invention.

As to the claim 26 limitation regarding “orthorhombic crystal structure,” applicants admit that ZSM-5 has the orthorhombic crystal structure. See page 19, first full paragraph.

As to claim 28, the reference does not disclose that the resultant MFI zeolite has the monoclinic structure. However, Bowes et al. disclose starting materials, and process steps that are identical to the presently claimed process, and therefore must result in an identical product.

Art Unit: 1755

In other words, the ZSM-5 of Bowes et al. after treatment is presumed to inherently possess the monoclinic crystal structure. See MPEP 2112.


### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (571)272-1376. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (572)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David Sample  
Primary Examiner  
Art Unit 1755